AMENDMENTS IN THE SPECIFICATION:

In the Specification:

Please replace the paragraph beginning at page 3, line 27, with the following rewritten paragraph:

As described below, a network medium interface device includes a pair of physical layer devices (PHYs) for transmitting and receiving signals on a network medium, and a pair of media access controllers (MACs) for monitoring the network medium and controlling transmissions on the network medium. The PHYs are used to transmit and receive frames or packets in accordance with respective, different standards or specifications. Depending on the capabilities of the network nodes to send and receive frames or packets in one or both of the specifications, one or the other of the MACs is selected to monitor the network medium and control access to the network medium. Thus information on the capabilities and activities of other nodes on the network may be gathered, via hardware or software. This node capability information may be used to determine the "topology" of the network, which in turn may be used to determine which of the MACs is used to monitor the network medium. The node capability information may also <u>be</u> used to determine which of the PHYs should be used to transmit a particular data frame or packet to an intended destination node.

Please replace the paragraph beginning at page 4, line 25, with the following rewritten paragraph:

Data received by the PHYs 21 and 22 from the network medium ~~14~~ is passed along to a receive processing block 26. The receive processing block 26 may include well-known devices such as state machines and FIFOs, and may perform functions such as assembling and/or reformatting frames or packets of data received, performing error checks on the frames, compiling and appending data to the frames or packets, and stripping unnecessary bits from the received frames or packets. As explained in greater detail below, the receive processing block 26 may send data and/or information to a node discovery block 28,

which may obtain, retain, and communicate node capability information and/or network topology information. The node discovery block 28 may include an electronically-readable storage device, such as a cache, for storing information regarding various nodes of the network, for example information regarding the capabilities of the nodes.

Please replace the paragraph beginning at page 5, line 12, with the following rewritten paragraph:

A transmit processing block 32 is coupled to the control block 30 for handling data to be transmitted on the network medium. The transmit processing block 32 may include devices such as state machines, FIFOs, and routing blocks. The data to be transmitted may be data generated from the ~~higher-level device block~~ MII 12. Alternatively, the transmitted data may be generated by the interface device 10 itself, such as by the control block 30. For instance, the interface device 10 may generate frames or packets, or may otherwise send data, regarding its capabilities, indicating its presence on the network, confirming successful receipt of data sent by another node, and/or requesting retransmission of frames or packets previously sent by another node on the network.

Please replace the paragraph beginning at page 6, line 23, with the following rewritten paragraph:

As explained further below, the transmit processing block 32 is operatively coupled to the node discovery block 28. The transmit processing block 32 may send queries to the node discovery block 28 regarding the capabilities of the destination node to which a frame or packet is to be transmitted. The node discovery block 28 may respond with an indication of which of the PHYs 21 and 22 is to be used in transmitting a frame to the indicated destination node.

Please replace the paragraph beginning at page 7, line 16, with the following rewritten paragraph:

Depending on the topology of the network (the capabilities of the various nodes), either the first MAC 41 or the second MAC 42 is used to monitor the network medium and control transmission of frames thereupon. For example, if all of the nodes of the network are able to operate with enhanced capabilities (e.g., sending frames with various priority levels), one of the MACs may be active (used to monitor the network medium and control transmission of frames). The active MAC in such a case is the MAC which is able to handle the enhanced capabilities. The other MAC (not configured to take advantage of the enhanced capabilities) may be the active MAC when the network includes nodes that do not operate with the enhanced capabilities (a "mixed network" topology).

Please replace the paragraph beginning at page 8, line 15, with the following rewritten paragraph:

Turning now to Figs. 3 and 4, two configurations ~~as~~ are shown for attaching the interface device 10 to higher-level blocks and a network medium. In Fig. 3, a network node 50 includes the interface device 10 as a means for connecting a host, such as a host computer 52, to a network medium 54. In the host computer 52, data from operating system or application software 56 is received and processed by a software device driver arrangement 60.

Please replace the paragraph beginning at page 8, line 21, with the following rewritten paragraph:

The operating system or application software 56 creates data and notifies a network interface, for example using TCP/IP, that data is waiting to be sent to a specific node of the network. The network interface apparatus translates the destination node information into a destination address, reformats the data as necessary, and sends the data to the device driver arrangement 60 via a defined interface, for example via an interface

following the NDIS (Network Driver Interface Specification) or ODI (Open Data-link Interface) specifications. The device driver arrangement 60 may reconfigure the data into a format compatible with devices downstream toward the network medium 54, and may create and add header information such as source and destination addresses, and data transmission speed. The device driver arrangement 60 may also divide data from the operating system or application software 56 into frames or packets of suitable length.

Please replace the paragraph beginning at page 9, line 3, with the following rewritten paragraph:

The frames or packets pass from the device driver arrangement 60 to a system MAC 64. The system MAC 64 may be part of a network interface card 66 which is installed in the host computer 52. The system MAC 64 may prepend or append additional information to packets received from the device driver arrangement 60. For example, the system MAC 64 may calculate and append some form of frame check sequence (FCS), such as a cyclic redundancy check (CRC), to the frames or packets.

Please replace the paragraph beginning at page 11, line 24, with the following rewritten paragraph:

It will be appreciated that the intermediate driver 80 ~~include~~ includes some or all of the functions of gathering, storing, and communicating information on network topology, which were described above with regard to the node discovery block 28. Thus the intermediate driver may gather node capability information from frames received by the interface device 10 and passed to the intermediate driver 80. Also, node capability information may be gathered from capabilities and status announcement (CSA) frames which may be sent by other nodes to provide information about that node and/or about the network topology. CSA frames may be broadcast frames, may be sent at specified intervals, and may include information about the capabilities of the sending node (e.g., the rate at which the node is capable of transmitting and receiving, and/or the capability or

lack thereof for specified enhanced operation features), the mode of operation of the sending node, and the network topology perceived by the sending node.

Please replace the paragraph beginning at page 13, line 1, with the following rewritten paragraph:

It will be appreciated that the configuration of the network node 50 shown in Fig. 3 and described above is merely exemplary, and that the network node 50~~interface~~ may have a different configuration if desired. For example, the intermediate driver 80 may alternatively be placed between the system MAC device driver 78 and the system MAC 64. Alternatively, the device drivers 78 and 80 may be replaced by a single driver, if desired.

Please replace the paragraph beginning at page 13, line 12, with the following rewritten paragraph:

Turning now to Fig. 4, a network node 100 is shown which also includes the interface device 10 described above. The network node 100, which may be part of a host computer 112, includes application and/or operating system software 116, and a software driver 118 coupled to the application software. The software driver 118 is coupled to the PCI 14 of the interface device 10, for example via a bus of the host computer 112. The network medium interface device 10~~32~~ is operatively coupled to a network medium 114, which may be of the same type as the network medium 54 described above.

Please replace the paragraph beginning at page 14, line 4, with the following rewritten paragraph:

Fig. 6 is also a high-level flow chart, showing the conceptual framework of a method 150 for the selection of an active PHY, from among the PHYs 21 and 22, to transmit a frame from the interface device 10 onto the network medium. In step 152, information on other nodes of the network is gathered or updated. This step may be identical to the step 142 of

the method 140, and it will be appreciated that the same node capability information may be used for both methods. In step 154 the node capability information is stored. Then, in step 156, the stored node capability information is used in selection of a PHY as the active PHY for transmitting an outgoing data frame or packet. The indicated return of the method to step 152 indicates that the node capability information may be essentially continuously updated.

Please replace the paragraph beginning at page 14, line 22, with the following rewritten paragraph:

In step 202 of the method, the destination address (DA) of the received frame is examined by the frame examination sub-block 44 to see if the DA is the same as the address of the node that the interface device 10 is part of. If not, then the received frame is intended for reception by another node, and no node capability information is ~~gather~~ gathered from the frame (the node capability information from the frame is not entered into the cache 45 maintained by the node discovery block 28).

Please replace the paragraph beginning at page 15, line 11, with the following rewritten paragraph:

If the received frame is determined in step 210 to have valid check sequences, then the node capability information regarding the sending node is extracted in step 212 and forwarded for storage, by the storage sub-block 46, in the cache 45. The extraction of the node capability information may include examining a field of the received frames. For example, the node capability information may include the type of node that sent the received frame, and the determining whether the received frame is from an HPNA 1.0 only node or an HPNA 2.0 capable node may include examination of a field in the received frame which has a nonzero value only for transmissions from HPNA 1.0 only nodes. The examination of such a field ~~filed~~ may be performed by the frame examination sub-block 44. Alternatively, the examination of the field may be performed by the

receive processing block 26 or the PHYs 21 and 22, with the results forwarded to the node discovery block 28.

Please replace the paragraph beginning at page 15, line 23, with the following rewritten paragraph:

Fig. 8 is a high-level flow chart of a method 220 to store the node capability information in the cache 45 of the node discovery block 28, by the storage sub-block 46 of the node discovery block. In step 222, the storage sub-block 46 examines the cache 45 to determine ~~of~~ if there is a current entry in the cache corresponding to the node source address (SA) of the node which sent the received frame. If so, the cache entry corresponding to the SA is updated in step 224 by writing the newly-acquired node capability information over the old node capability information.

Please replace the paragraph beginning at page 17, line 15, with the following rewritten paragraph:

The node capability information gathered by the node discovery block 28 may also be used to determine the topology of the network. For example, the node discovery block may make a determination as to whether there are any HPNA 1.0 only nodes in the network. The determination may be made by utilizing the node capability information gathered and/or stored by the node discovery block 28. The result may be output as a MIXED_NET signal, which may be set to TRUE if ~~a~~ an HPNA 1.0 only node is detected, and may be set to FALSE if no such nodes are detected. The signal may be asserted or otherwise sent to the control block 30, where it may be stored in a control register, and may be accessed for use in determining which of the MACs 41 and 42 is an active MAC for monitoring and controlling access to the network medium. In addition the MIXED_NET value may be used in the determination as to which of the PHYs 21 and 22 to use in transmitting frames. For example, the topology of the network as embodied in the MIXED_NET value may be used in selection which of the PHYs 21 and 22 will be used for transmitting multicast or broadcast frames.

Please replace the paragraph beginning at page 18, line 25, with the following rewritten paragraph:

It will be appreciated that some or all of the above-described functions of the node discovery block 28 may alternatively or in addition be performed (with suitable modification) by software, for example by the intermediate driver 80 shown in Fig. 3 and described above. As an alternative to or in addition to obtaining node capability information from received data frames intended for the node, the software may obtain node capability information from capability and status announcement (CSA) frames, for example the CSA frames described in the HPNA 2.0 specification, section 2.0.6. CSA frames, as described in section 2.0.6, are broadcast frames periodically sent out by HPNA 2.0 nodes on the network. The CSA frames described in section 2.0.6 include fields indicating the sending node's capabilities, such as what version of the HPNA specification it supports, what data rates it is capable of sending/receiving at, what enhanced capabilities it is capable of, etc. It will be appreciated that many variants of the above-described CSA frames may be employed.

Please replace the paragraph beginning at page 20, line 6, with the following rewritten paragraph:

After an incoming frame is received ~~In~~ in step 302 of the method, in step 304 the frame is examined to determine if the frame is a capability and status announcement (CSA) frame. If the incoming frame is a CSA frame, a check is made to determine if there is an entry, corresponding to the source node of the incoming frame, in a look-up table 310 (Fig. 10) stored in a storage device, which is maintained to store desirable transmission rate information for frames to be transmitted by the device. The look-up table 310 has a number of entries 312, each of the entries corresponding to another node of the network, and each of the entries including the address of the corresponding node and a desirable transmission rate for frames to be sent to that node. The look-up table 310 may be maintained as part of the cache 45. Alternatively, the look-up table 310 may be maintained in a different storage device.

Please replace the paragraph beginning at page 20, line 18, with the following rewritten paragraph:

If the look-up table 310 does not contain an entry corresponding to the source address (SA) of the incoming frame, an entry corresponding to the sending node of the incoming frame is added in step 314. The look-up table 310 is first examined for an empty cache register. If an empty entry register exists, the SA and the desirable transmission rate are written to the empty register. It will be appreciated that the desirable transmission rate information may be extracted from the incoming frame by examining an appropriate field of the incoming frame, for example. The desirable transmission rate information may be a desirable transmission rate. Alternatively, a desirable transmission rate may be determined from the desirable transmission rate information.

Please replace the abstract of the disclosure, with the following rewritten abstract:

A network node has multiple physical layer devices (PHYs), multiple media access controllers, and means for gathering and utilizing information regarding the capabilities of other nodes on the network. The node capability information may be gathered using hardware or software, and may involve gathering information from data frames received by the node, and/or from capability and status announcement frames received by the node. Hardware means for gathering the node capability information may include a receive processing block and/or a node discovery block, which examine all or portions of received frames, and which include a look-up table for storing and receiving information such as desired transmission rates for frames sent to other nodes. The PHYs of the interface in an exemplary embodiment are able to transmit and receive data frames or packets which are in accordance with different home phoneline networking alliance (HPNA) specifications, for example, HPNA 1.0 and HPNA 2.0.

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